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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/786,597	02/28/2001	Kenichi Hirahara	KAM/133/PC/U	1408

2543 7590 11/13/2002

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EXAMINER

DINH, TUAN T

ART UNIT PAPER NUMBER

2827

DATE MAILED: 11/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/786,597

Applicant(s)

HIRAHARA ET AL.

Examiner

Tuan T Dinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
Element 12 does not describe in specification.
Appropriate correction is required.

Claim Objections

2. Claim 1 is objected to because of the following informalities:
Claim 1, line 7, change "in said flexible..." to --said flexible...--.
Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1-2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, lines 2-3, it is unclear. The phrase of "an internal layer circuit board which can be a cable portion" is not positive claim.

Regarding claim 1, line 4, it is unclear. The phrase of "external layer circuit board which can be component" is not a positive claim.

Regarding claim 1, lines 4-6, it is unclear. The phrase of "external layer circuit board...at a predetermined position" is not understood. What does applicant mean of "a predetermined position"

Regarding claim 1, lines 7-9, it is unclear. The phrase of "in said flexible multiplayer circuit board...predetermined positions of said internal layer circuit board" is not understood. How can "through hole plated can be formed at predetermined positions of said internal layer circuit board?"

Regarding claim 1, lines 10-14, it is unclear. The phrase of "a surface protection layer formed on an external surface of a wiring pattern...is formed in a region...plated conductor portion" is not understood.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Yanagi et al. (JP 06-085406 A, hereafter as JP)

As best understood to claims 1-4, JP discloses a through hole conduction structure of a flexible multilayer circuit board (100, see an attached paper) and a method for forming a through hole conduction structure of a flexible multiplayer circuit

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board as shown in figures 1-12, and also, see an attached paper on a back of an office action, comprising:

an internal layer circuit board (4, 7, 7, 5, 5, hereafter A) which being formed a cable portion; and

an external layer circuit board (8, 9, hereafter B) which being formed a component mounting portion laminated on one side or both sides of said internal layer circuit board (see figures 1-2),

wherein, said flexible multilayer circuit board having a through hole plated conduction portion (10) formed of said internal layer circuit board and said external layer circuit board,

a surface protection layer (6A, 6B), which is a cover film consisting of polyimide resin forming on an external surface of a wiring pattern (5) of said internal layer circuit board is formed in a region retreated toward the outside from a position of a through hole (11) for the through hole plated conduction portion (10).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Quaschner, Hamby, Larson et al., Desai, Takahashi et al., Sekimoto et al. and Fushie et al. Disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

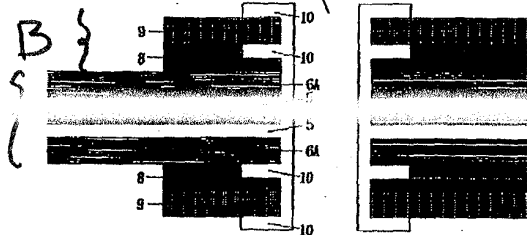
TD

November 4, 2002

Albert W. Paladini 11-8-02
ALBERT W. PALADINI
PRIMARY EXAMINER

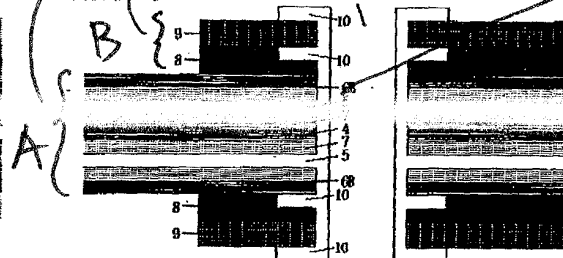
【図1】

本発明の断面図 (第1図)



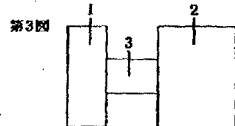
【図2】

従来技術断面図 (第2図)



Surface cover
or
Surface protection
layer 6A,
6B

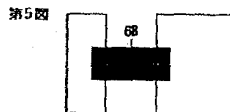
【図3】



【図4】

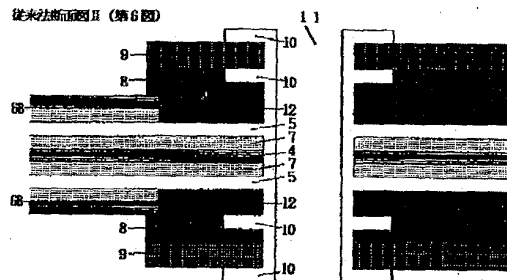


【図5】



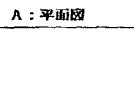
【図6】

従来技術断面図 (第6図)

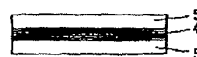


【図7】

第7図



B: 断面図



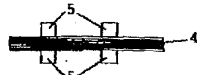
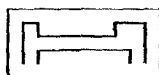
【図10】

第10図



【図8】

第8図



【図9】

第9図



【図11】

第11図



【図12】

第12図

